

## RF Power MOSFET Transistor 200 W, 2 - 175 MHz, 28 V

Rev. V1

### Features

- N-Channel enhancement mode device
- DMOS structure
- Lower capacitances for broadband operation
- High saturated output power
- Lower noise figure than bipolar devices
- RoHS Compliant

### ABSOLUTE MAXIMUM RATINGS AT 25° C

Parameter	Symbol	Rating	Units
Drain-Source Voltage	$V_{DS}$	65	V
Gate-Source Voltage	$V_{GS}$	20	V
Drain-Source Current	$I_{DS}$	20	A
Power Dissipation	$P_D$	389	W
Junction Temperature	$T_J$	200	°C
Storage Temperature	$T_{STG}$	-65 to +150	°C
Thermal Resistance	$\theta_{JC}$	0.45	°C/W

### TYPICAL DEVICE IMPEDANCE

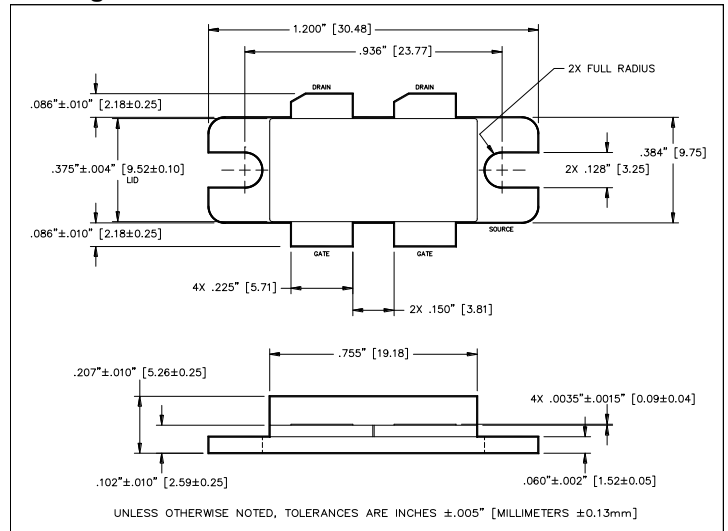
F (MHz)	$Z_{IN}$ ( $\Omega$ )	$Z_{LOAD}$ ( $\Omega$ )
30	2.7 - j4.8	7.2 - j1.9
100	1.6 - j3.0	5.25 - j1.4
150	1.5 - j2.0	5.0 - j0.7
175	1.6 - j1.0	5.2 - j0.6
200	1.8 - j0.5	5.5 - j0.5

$V_{DD} = 28V, I_{DQ} = 1000mA, P_{OUT} = 200 W$

$Z_{IN}$  is the series equivalent input impedance of the device from gate to source.

$Z_{LOAD}$  is the optimum series equivalent load impedance as measured from drain to ground.

### Package Outline

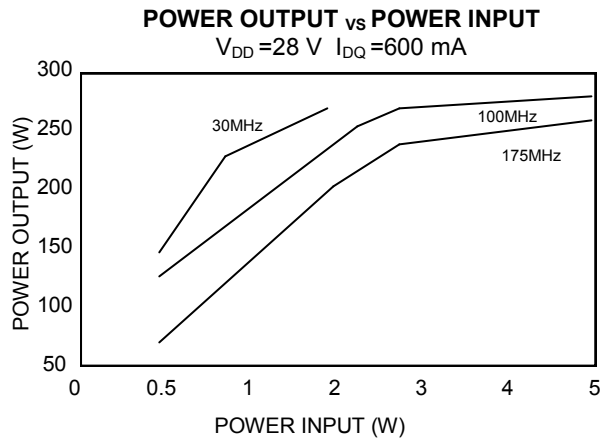
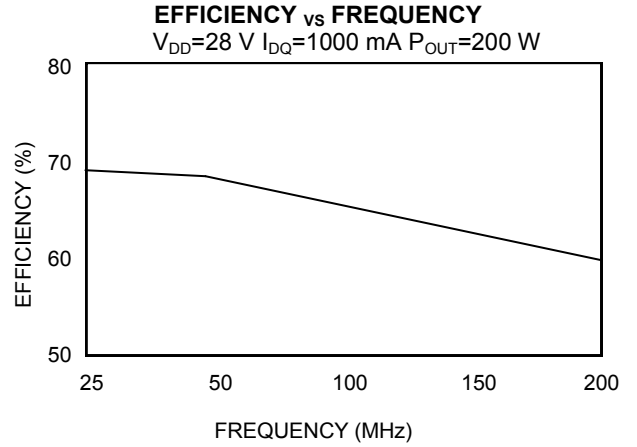
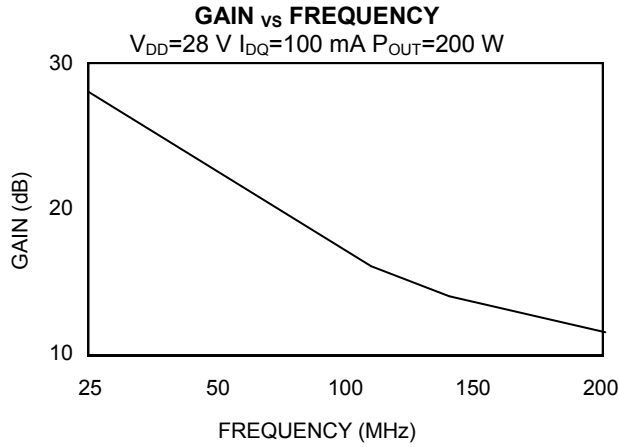


LETTER DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	30.35	30.61	1.195	1.205
B	23.65	23.90	.931	.941
C	13.72	14.22	.540	.560
D	9.63	9.88	.379	.389
E	9.40	9.65	.370	.389
F	9.40	9.65	.370	.389
G	5.59	5.84	.220	.230
H	18.80	19.30	.740	.760
J	9.40	9.65	.370	.380
K	3.12	3.38	.123	.133
L	1.47	1.57	.058	.062
M	2.39	2.74	.094	.108
N	5.03	5.69	.198	.224
P	.05	.13	.002	.005

### ELECTRICAL CHARACTERISTICS AT 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Drain-Source Breakdown Voltage	$BV_{DSS}$	65	-	V	$V_{GS} = 0.0 V, I_{DS} = 25.0 mA$
Drain-Source Leakage Current	$I_{DSS}$	-	5.0	mA	$V_{DS} = 28.0 V, V_{GS} = 0.0 V$
Gate-Source Leakage Current	$I_{GSS}$	-	5.0	$\mu A$	$V_{GS} = 20.0 V, V_{DS} = 0.0 V$
Gate Threshold Voltage	$V_{GS(TH)}$	2.0	6.0	V	$V_{DS} = 10.0 V, I_{DS} = 500.0 mA$
Forward Transconductance	$G_M$	2.5	-	S	$V_{DS} = 10.0 V, I_{DS} = 5.0A, \Delta V_{GS} = 1.0V, 80 \mu s$ Pulse
Input Capacitance	$C_{ISS}$	-	225	pF	$V_{DS} = 28.0 V, F = 1.0 MHz$
Output Capacitance	$C_{OSS}$	-	200	pF	$V_{DS} = 28.0 V, F = 1.0 MHz$
Reverse Capacitance	$C_{RSS}$	-	40	pF	$V_{DS} = 28.0 V, F = 1.0 MHz$
Power Gain	$G_P$	13	-	dB	$V_{DD} = 28.0 V, I_{DQ} = 1000 mA, P_{OUT} = 200.0 W F = 175 MHz$
Drain Efficiency	$\eta_D$	55	-	%	$V_{DD} = 28.0 V, I_{DQ} = 1000 mA, P_{OUT} = 200.0 W F = 175 MHz$
Load Mismatch Tolerance	VSWR-T	-	10:1	-	$V_{DD} = 28.0 V, I_{DQ} = 1000 mA, P_{OUT} = 200.0 W F = 175 MHz$

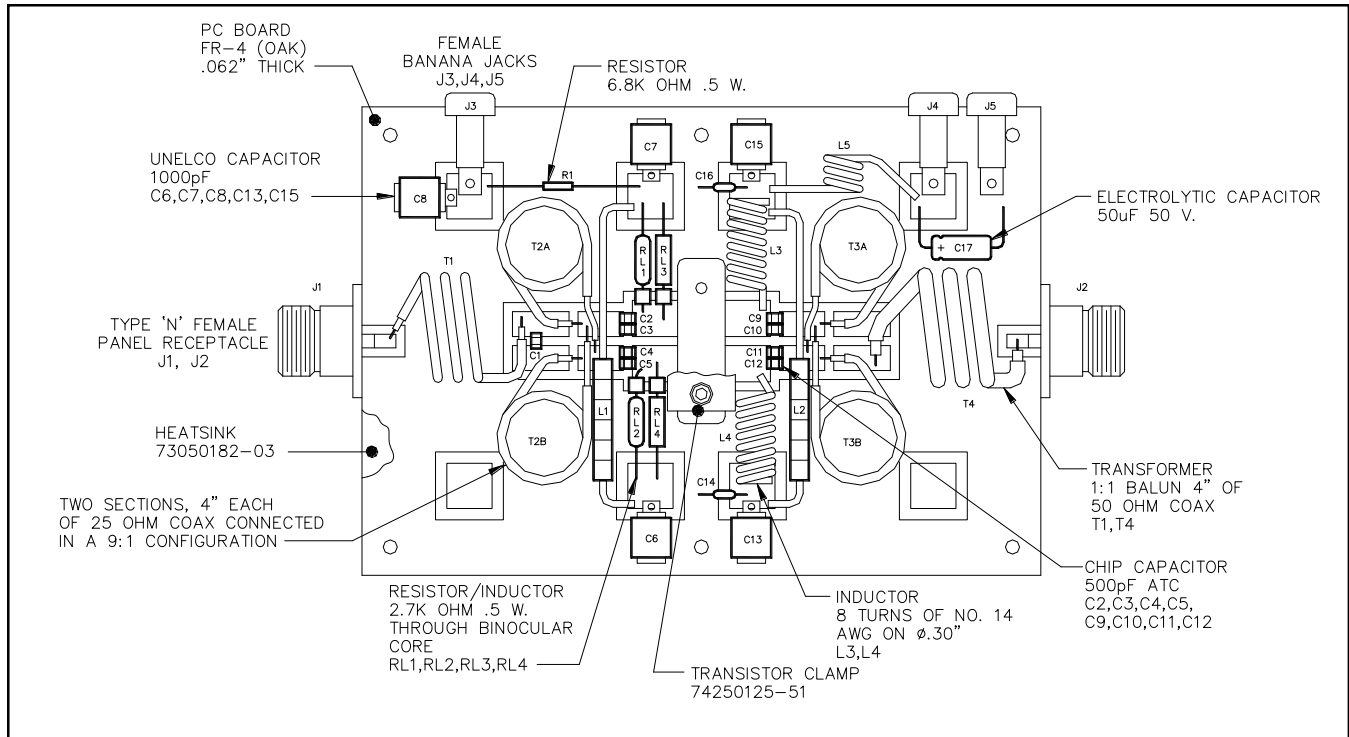
**Typical Broadband Performance Curves**



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### TEST FIXTURE SCHEMATIC



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